The Recursive Lung Tank - Public Domain Concept Release

This document describes the Recursive Lung Tank, a closed-loop, entropy-aware breathing mechanism designed for space travel and advanced life-support systems.

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Status: Public Domain Open Science Declaration

Overview:

The Recursive Lung Tank is a 3-tank system that cycles, purifies, and recirculates breathable oxygen using recursive logic inspired by natural respiration. It offers a low-waste, high-efficiency model for long-term oxygen management, ideal for space environments.

Key Features:

- 4-Tube Input/Output System:
  - Tubes 1 & 4: Exhalation routing to filtration and CO2 isolation
  - Tubes 2 & 3: Inhalation pathways from fresh and cycled O2 tanks

- 3-Tank Structure:
  - Tank 1: Fresh O2 storage
  - Tank 2: Recycled O2 after filtration
  - Tank 3: Overflow and emergency buffer

- Filtration and Pressure Logic:
  - CO2 is isolated and absorbed through carbon mesh filters
  - Remaining O2 is sent to Tank 2 and redirected into Tube 3

- Recursive feedback detects pressure, routes breath according to need

Purpose:

To demonstrate that breathing systems can self-balance using recursive field principles, with minimal entropy loss and maximum phase return. The Recursive Lung Tank functions like a synthetic organ, not just a container.

This design is released to the public domain to inspire open-source hardware, life-support design for deep space travel, and future entropy-aware human-machine ecosystems.